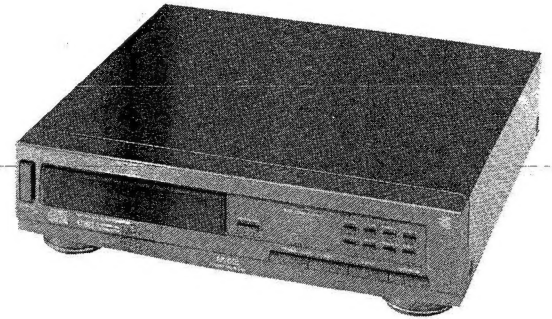


Service  
Service  
Service



45 281 A11

# Service Manual

COMPACT  
disc  
DIGITAL AUDIO

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### (S) Varning!

Osynlig laserstrålning när denna del är öppnad och spärren är urkopplad. Betrakta ej strålen.

### (DK) Advarsel!

Usynlig laserstrålning ved åbning når sikkerhedsafbrydere er ude af funktion. Undgå udsættelse for stråling.

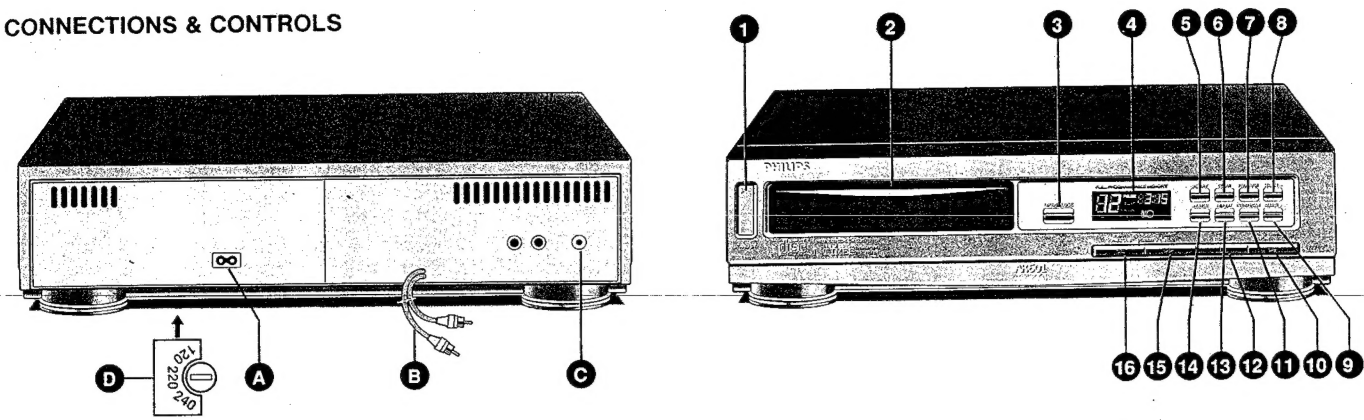
### (SF) Varoitus!

Laite sisältää laserdiodin, joka lähettää näkymätöntä silmille vaarallista lasersäteilyä.

**CLASS 1  
LASER PRODUCT**

3122 110 03420

CONNECTIONS & CONTROLS



|   |                       |        |   |              |      |    |              |      |
|---|-----------------------|--------|---|--------------|------|----|--------------|------|
| A | Mains socket          | 1001   | 1 | Power on     | 1600 | 9  | Select -     | 1708 |
| B | Line out              | Chinch | 2 | Tray         | 1813 | 10 | Play / Pause | 1701 |
| C | Remote in             | 1601   | 3 | Open / Close | 1713 | 11 | Intro scan   | 1707 |
| D | Voltage selector      | SK301  | 4 | Display      | 1700 | 12 | Stop         | 1702 |
|   | (not in all versions) |        | 5 | Review       | 1712 | 13 | Repeat       | 1706 |
|   |                       |        | 6 | Program      | 1711 | 14 | Shuffle      | 1705 |
|   |                       |        | 7 | Clear        | 1710 | 15 | Next         | 1704 |
|   |                       |        | 8 | Select +     | 1709 | 16 | Previous     | 1703 |

SPECIFICATION

|                   |                             |                    |   |
|-------------------|-----------------------------|--------------------|---|
| <b>General</b>    |                             | <b>CD Part</b>     |   |
| Power consumption | : ≤12 W (4 W in stand by)   | Frequency response | : 20-20.000 Hz (+2/-4 dB)                                     |
| Mains             | : 220 V / 50 Hz for /00,/30 | Line output level  | : 1,7 V ±2 dB   |
|                   | : 240 V / 50 Hz for /05,/35 | Headphone          | : 2x20 mW / 32 Ω  |
|                   | : 120 V / 60 Hz for /17     | Signal/noise ratio | : ≥80 dB  |
|                   | : Voltage selector          | Distortion         | : ≤0,1% at 1 kHz  |
|                   | (110/120/220 V) for /01,/31 | Channel difference | : ≤ 2 dB at 1 kHz   |
|                   |                             | Channel crosstalk  | : ≤50 dB at 1 kHz   |
| <b>Laser</b>      |                             | De emphasis        | : 0 or 15/50 μs switched automatically by subcode on the disc |
| Output power      | : 3 mW max.                 |                    |   |
| Wavelength        | : 780 nm                    |                    |   |

- GB**

Safety regulations require that the set be restored to its original condition and that parts which are identical with those specified be used.
- NL**

Veiligheidsbepalingen vereisen, dat het apparaat in zijn oorspronkelijke toestand wordt teruggebracht en dat onderdelen, identiek aan de gespecificeerde worden toegepast.
- D**

Bei jeder Reparatur sind die geltenden Sicherheitsvorschriften zu beachten. Der Originalzustand des Geräts darf nicht verändert werden für Reparaturen sind Original-Ersatzteile zu verwenden.
- I**

Le norme di sicurezza esigono che l'apparecchio venga rimesso nelle condizioni originali e che siano utilizzati pezzi di ricambio identici a quelli specificati.
- F**

Les normes de sécurité exigent que l'appareil soit remis à l'état d'origine et que soient utilisées les pièces de rechange identiques à celles spécifiées.

**GB WARNING**

All ICs and many other semi-conductors are susceptible to electrostatic discharges (ESD). Careless handling during repair can reduce life drastically.

When repairing, make sure that you are connected with the same potential as the mass of the set via a wrist wrap with resistance. Keep components and tools also at this potential.



**NL WAARSCHUWING**

Alle IC's en vele andere halfgeleiders zijn gevoelig voor electrostatische ontladingen (ESD).

Onzorgvuldig behandelen tijdens reparatie kan de levensduur drastisch doen verminderen. Zorg ervoor dat u tijdens reparatie via een polsband met weerstand verbonden bent met hetzelfde potentiaal als de massa van het apparaat.

Houd componenten en hulpmiddelen ook op hetzelfde potentiaal.

**F ATTENTION**

Tous les IC et beaucoup d'autres semi-conducteurs sont sensibles aux décharges statiques (ESD). Leur longévité pourrait être considérablement écourtée par le fait qu'aucune précaution n'est prise à leur manipulation.

Lors de réparations, s'assurer de bien être relié au même potentiel que la masse de l'appareil et enfilez le bracelet serti d'une résistance de sécurité.

Veiller à ce que les composants ainsi que les outils que l'on utilise soient également à ce potentiel.

**D WARNING**

Alle ICs und viele andere Halbleiter sind empfindlich gegen elektrostatische Entladungen (ESD).

Unvorsichtige Behandlung bei der Reparatur kann die Lebensdauer drastisch vermindern. Sorgen sie dafür, dass Sie im Reparaturfall über ein Pulsarmband mit Widerstand mit dem Massepotential des Gerätes verbunden sind. Halten Sie Bauteile und Hilfsmittel ebenfalls auf diesem Potential.

**I AVVERTIMENTO**

Tutti IC e parecchi semi-conduttori sono sensibili alle scariche statiche (ESD). La loro longevità potrebbe essere fortemente ridatta in caso di non osservazione della più grande cauzione alla loro manipolazione.

Durante le riparazioni occorre quindi essere collegato allo stesso potenziale che quello della massa dell'apparecchio tramite un braccialetto a resistenza.

Assicurarsi che i componenti e anche gli utensili con quali si lavora siano anche a questo potenziale.

## GB Service Testprogramme

To get into service mode hold the keys "SELECT+" and "SELECT-" depressed during switching power on. (µP reset)

The programme goes back to Service pos."1" by pressing "STOP" in any Service position.

Pressing "SELECT-" the tray moves outside. Pressing "SELECT+" the tray moves inside.

### Service pos. "1"

Test of radial servo

The arm is moved towards inner position and on the display the vertical segments are activated (see fig.1). Pressing the key "PREV" the arm is moved outside and on the display the horizontal segments are activated (see fig.2).

### Service pos. "2"

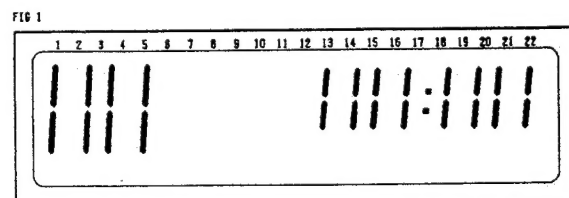
Test of focus servo and disc motor.

The service pos. "2" is activated by pressing "PLAY". The display shows "00 00:00". The laser is switched on and the lens makes an up and down movement according to the applied triangle voltage for focus-search. Pressing "PREV" the turntable motor turns counter clockwise. Pressing "NEXT" the motor turns clockwise. If a disc has been inserted and a focus can be found the display shows "11 11:11".

### Service pos. "3"

The service pos. "3" is activated by pressing "PLAY". The radial control is switched on and if the radial control works correctly, the arm follows the track. The display shows "22 22:22". Pressing "PREV" the arm makes leaps backwards. Pressing "NEXT" the µP reads the subcode. If the subcode reading works, the arm makes leaps forward as long as pressing the "NEXT" key.

To leave the service testprogramme switch off the set.



## F Programme de test de service

Pour parvenir en mode de service, maintenez enfoncées les touches "SELECT+" et "SELECT-" tandis que vous mettez l'appareil en circuit (microprocesseur remis à zéro).

Le programme revient en Position de Service "1" si vous appuyez sur "STOP" à partir de n'importe quelle position de service.

Si vous appuyez sur "SELECT-", le plateau se déplace vers l'extérieur. Par pression sur la touche "PRESET+", il se déplace vers l'intérieur.

### Position de Service "1"

Test du servomécanisme radial

Le bras est déplacé vers la position intérieure et des segments verticaux sont activés sur l'afficheur (fig.1). En appuyant sur la touche "PREV" le bras est déplacé vers l'extérieur et des segments horizontaux sont activés sur l'afficheur (fig.2).

### Position de Service "2"

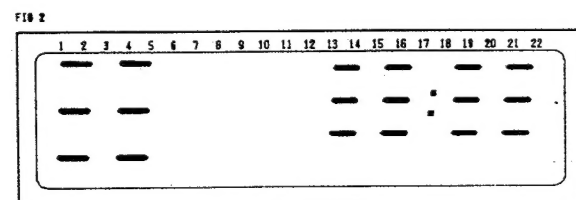
Test du servomécanisme de mise au point et du moteur du plateau

La position de service "2" est activée après pression sur la touche "PLAY". L'afficheur indique "00 00:00". Le laser est mis en circuit et la lentille effectue un mouvement de haut en bas conformément à la tension triangulaire appliquée pour la recherche de mise au point. Si vous appuyez sur "PREV", le moteur du plateau rotatif tourne dans le sens inverse d'horloge. Si vous appuyez sur "NEXT" il tourne dans le sens d'horloge. Si un disque a été introduit et la mise au point trouvée, l'afficheur indiquera "11 11:11".

### Position de Service "3"

La position de service "3" est activée par pression sur la touche "PLAY". La commande radiale est mise en circuit et si elle fonctionne correctement, le bras suit la piste. L'afficheur indique "22 22:22". Si vous appuyez sur "PREV", le bras fait des sauts en arrière. Si vous appuyez sur "NEXT", le microprocesseur lit le sous-code. Si la lecture du sous-code fonctionne bien, le bras fait des sauts en avant tant que vous maintenez enfoncée la touche "NEXT".

Pour quitter le programme de test de service, mettez l'unité hors circuit.



## NL Service Testprogramma

Om in de servicestand te komen, dient u het apparaat in te schakelen terwijl u de toetsen "SELECT+" en "SELECT-" ingedrukt houdt. (µP reset)

U kunt het programma naar servicepositie "1" laten terugkeren door in een willekeurige servicepositie de toets "STOP" in te drukken.

Als u "SELECT-" indrukt, komt de slede naar buiten. Drukt u "SELECT+" in, dan gaat de slede naar binnen.

### Servicepositie "1"

Controle van de radiale servo

De arm beweegt naar binnen en op het display worden de verticale segmenten geactiveerd (zie figuur 1). Als u "PREV" indrukt, beweegt de arm naar buiten en worden op het display de horizontale segmenten geactiveerd (zie figuur 2).

### Servicepositie "2"

Controle van focusservo en draaitafelmotor.

U kunt servicepositie "2" activeren door "PLAY" in te drukken. Op het display verschijnt "00 00:00". De laser wordt ingeschakeld en de lens maakt een op- en neergaande beweging volgens de toegepaste driehoekspanning voor focuszoeken. Als u "PREV" indrukt, draait de draaitafelmotor linksom. Drukt u "NEXT" in, dan draait de draaitafelmotor rechtsom. Als een plaat in het apparaat is geplaatst en er kan een focus gevonden worden, verschijnt op het display "11 11:11".

### Servicepositie "3"

U kunt servicepositie "3" activeren door "PLAY" in te drukken. De radiale sturing wordt ingeschakeld en als deze goed functioneert, volgt de arm het spoor. Op het display verschijnt "22 22:22". Als u "PREV" indrukt, maakt de arm sprongen achteruit. Als u "NEXT" indrukt, springt de arm vooruit zolang de toets is ingedrukt.

Om het service testprogramma te verlaten, dient u het apparaat uit te schakelen.

## I Programma test di servizio

Per entrare nel modo di servizio mantenere premuto i tasti "SELECT+" e "SELECT-" mentre l'apparecchio viene acceso (microprocessore azzerato).

Il programma ritorna alla Posizione di servizio "1" premendo il tasto "STOP" a partire da qualsiasi posizione di servizio.

Premendo il tasto "SELECT-", il piatto si sposterà verso l'esterno e premendo il tasto "SELECT+", il piatto si sposterà verso l'interno.

### Posizione di servizio "1"

Test del servomeccanismo radiale

Il braccio è spostato verso l'esterno e sul display sono attivati dei segmenti verticali (fig.1). Premendo il tasto "PREV", il braccio si sposterà verso l'esterno e sul display verranno attivati dei segmenti orizzontali (fig.2).

### Posizione di servizio "2"

Test del servomeccanismo di messa a fuoco e del motorino del piatto

La posizione di servizio "2" viene attivata premendo il

## D Service Testprogramm

Um in das Service Testprogramm zu gelangen, drücken Sie "SELECT+" und "SELECT-" während "POWER ON". (µP reset)

Durch Drücken der "STOP" Taste gelangt man von jeder Service Position in die Service Pos."1".

Durch Drücken von "SELECT-" bzw. "SELECT+" fährt die Lade heraus bzw. hinein.

### Service Pos. "1"

Test des Radial Servos

Der Arm wird nach innen bewegt. Das Display zeigt alle vertikalen Segmente (Siehe Fig.1). Durch Drücken der Taste "PREV" wird der Arm nach außen bewegt. Das Display zeigt alle horizontalen Segmente (Siehe Fig.2).

### Service Pos. "2"

Test des Fokus Servos und des Disk Motors.

Die Service Pos."2" wird durch Drücken der Taste "PLAY" aktiviert. Das Display zeigt "00 00:00". Der Laser wird eingeschaltet und versucht zu fokussieren. (Linse wird mit Dreieckspannung auf und ab bewegt). Wenn Sie die Taste "PREV" drücken, dreht sich der Disk Motor gegen den Uhrzeigersinn. Bei "NEXT" läuft er im Uhrzeigersinn. Wenn Sie eine Disk eingelegt haben und die Fokussierung funktioniert, zeigt das Display "11 11:11".

### Service Pos. "3"

Durch Drücken der "PLAY" Taste gelangen Sie in die Service Pos."3". Die Radialregelung wird eingeschaltet. Wenn die Radialregelung korrekt arbeitet, folgt der Arm der Spur. Das Display zeigt "22 22:22". Durch Drücken der Taste "PREV" macht der Arm kleine Sprünge zurück. Bei "NEXT" liest der µP den Subcode ein. Wenn das Einlesen des Subcodes funktioniert, macht der Arm kleine Sprünge vorwärts, solange Sie die "NEXT" Taste gedrückt halten.

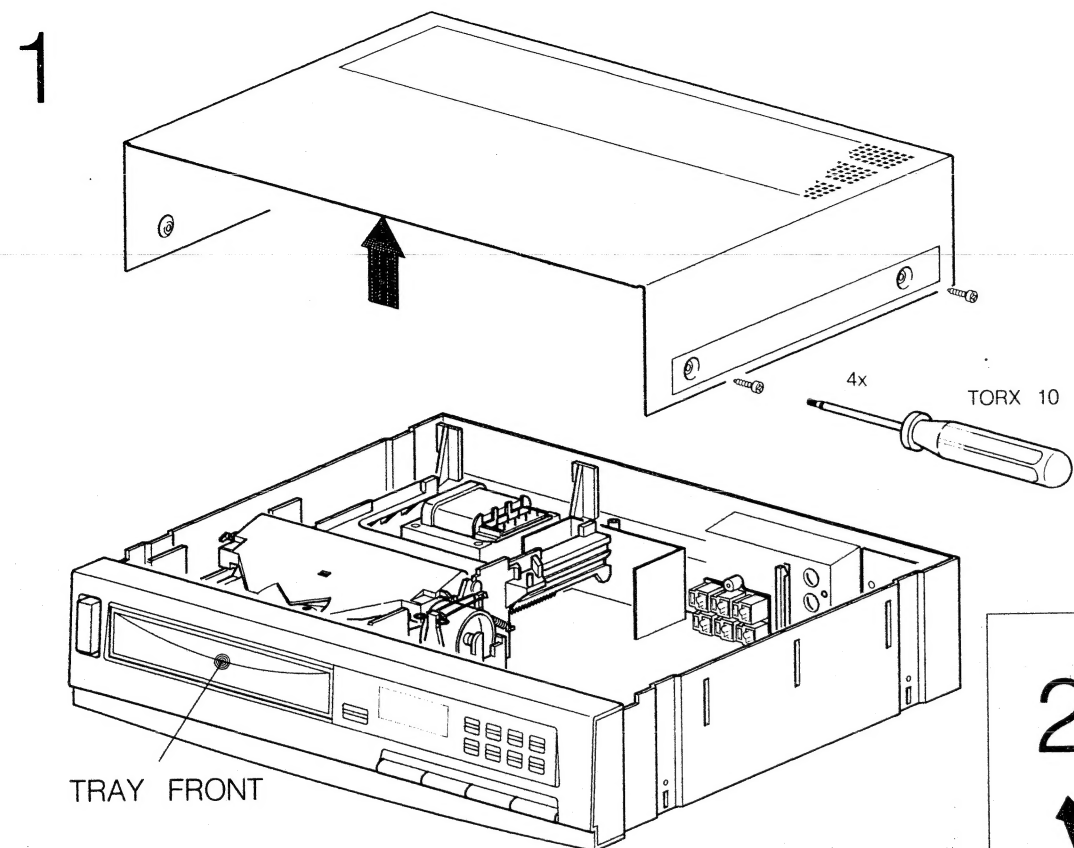
Um das Service Testprogramm zu verlassen, müssen Sie das Gerät ausschalten.

tasto "PLAY". Il display visualizza "00 00:00". Il laser viene inserito e la lente effettua un movimento dall'alto in basso conforme alla tensione triangolare applicata per la ricerca di messa a fuoco. Premendo il tasto "PREV", il motorino del piatto girevole girerà in senso antiorario e premendo il tasto "NEXT" questo gira in senso orario. Quando è stato inserito un disco ed è stata trovata la messa a fuoco, il display visualizzerà "11 11:11".

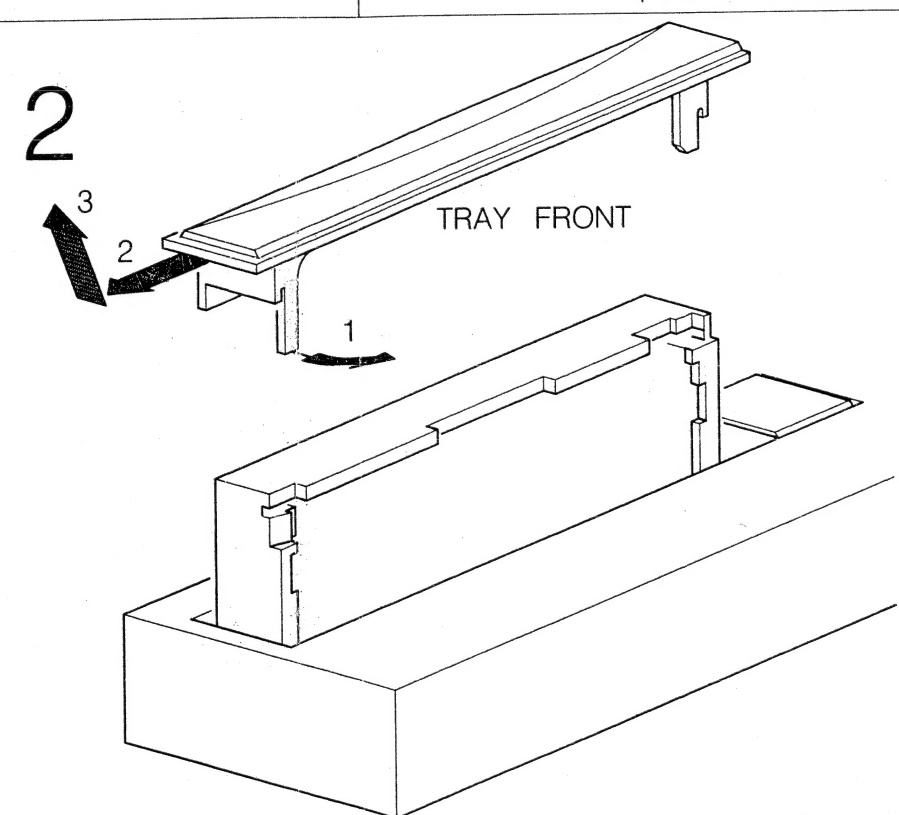
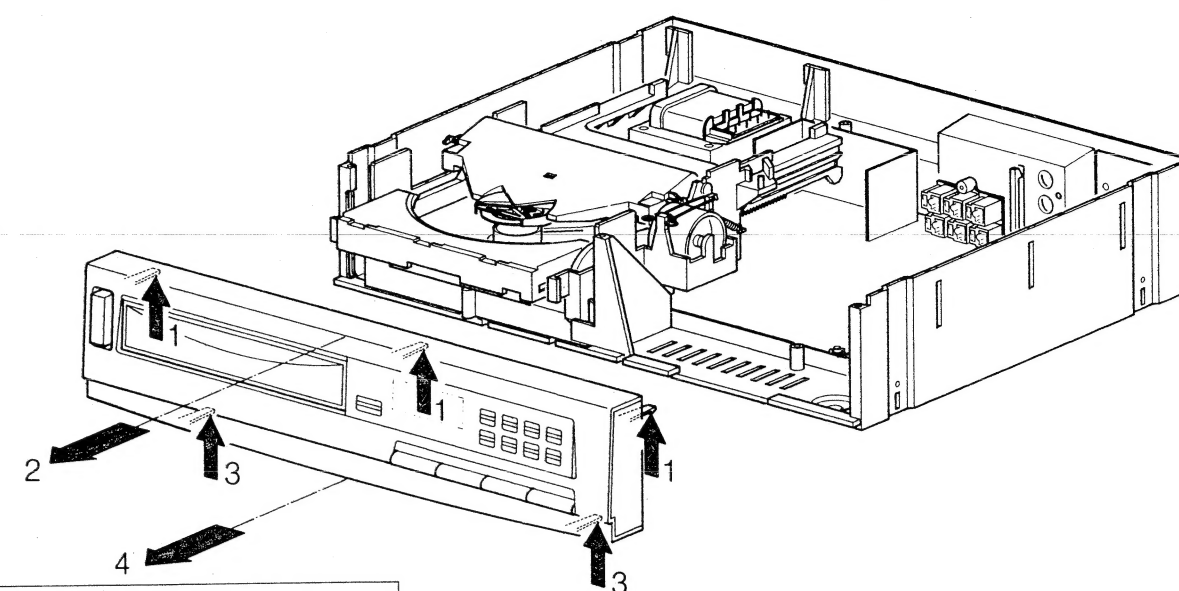
### Posizione di servizio "3"

La posizione di servizio "3" viene attivata premendo il tasto "PLAY". Viene inserito il controllo radiale se funziona correttamente, il braccio segue il brano. Il display visualizza "22 22:22". Premendo il tasto "PREV", il braccio farà dei salti all'indietro. Premendo il tasto "NEXT", il microprocessore leggerà il subcodice. Se la lettura del subcodice funziona bene, il braccio farà dei salti in avanti fino a quando non verrà rilasciato il tasto "NEXT".

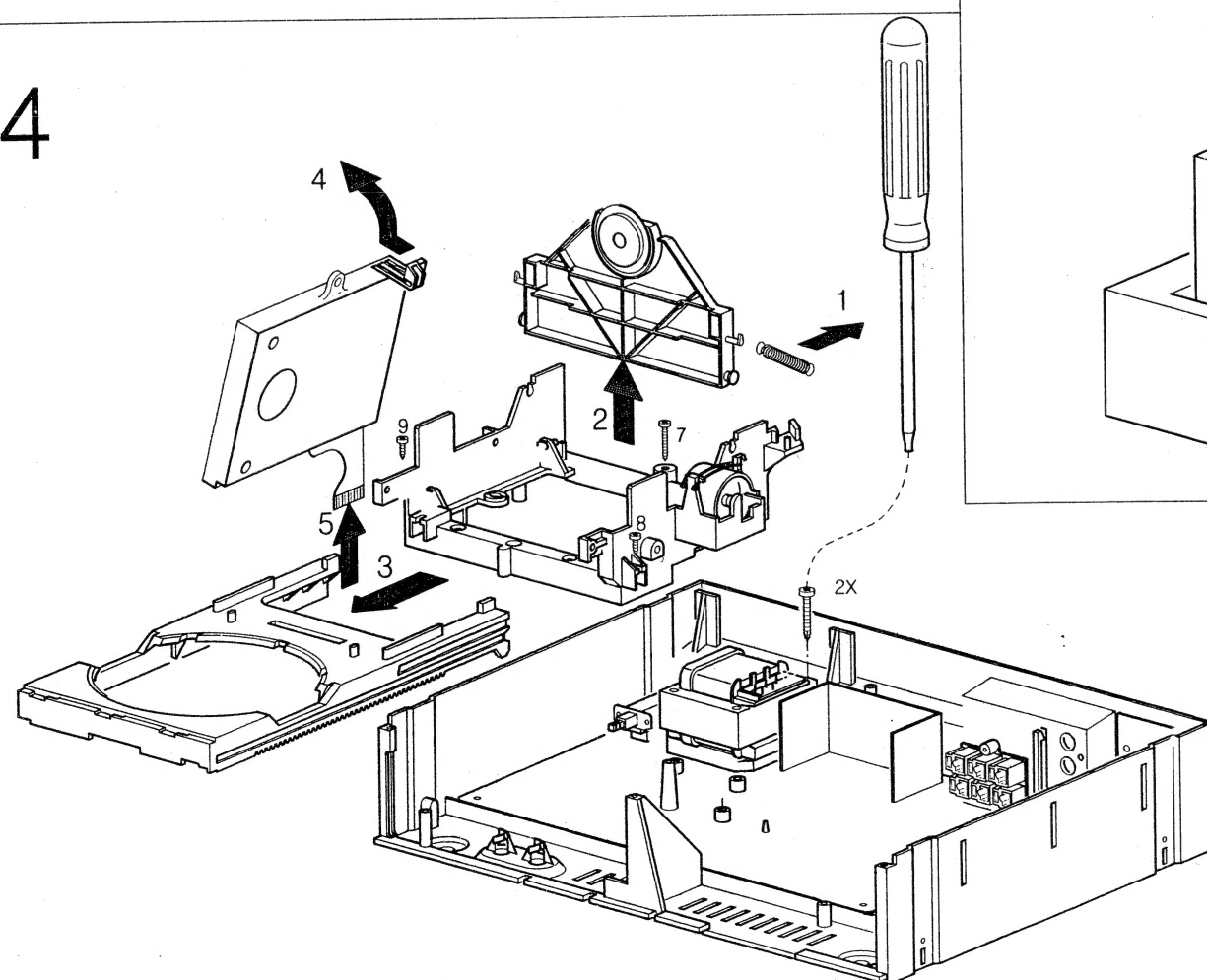
Per rilasciare il programma di servizio, spegnere l'apparecchio.



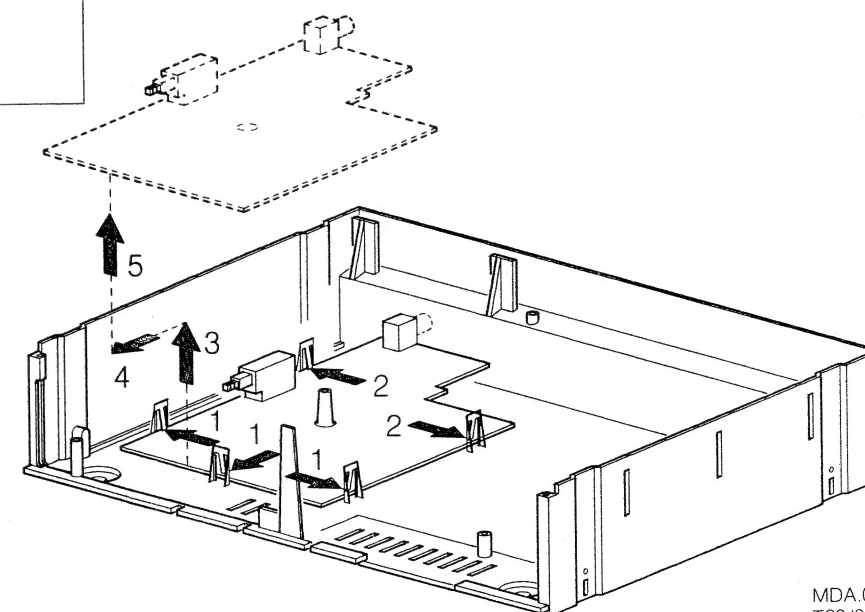
3



4



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Loa

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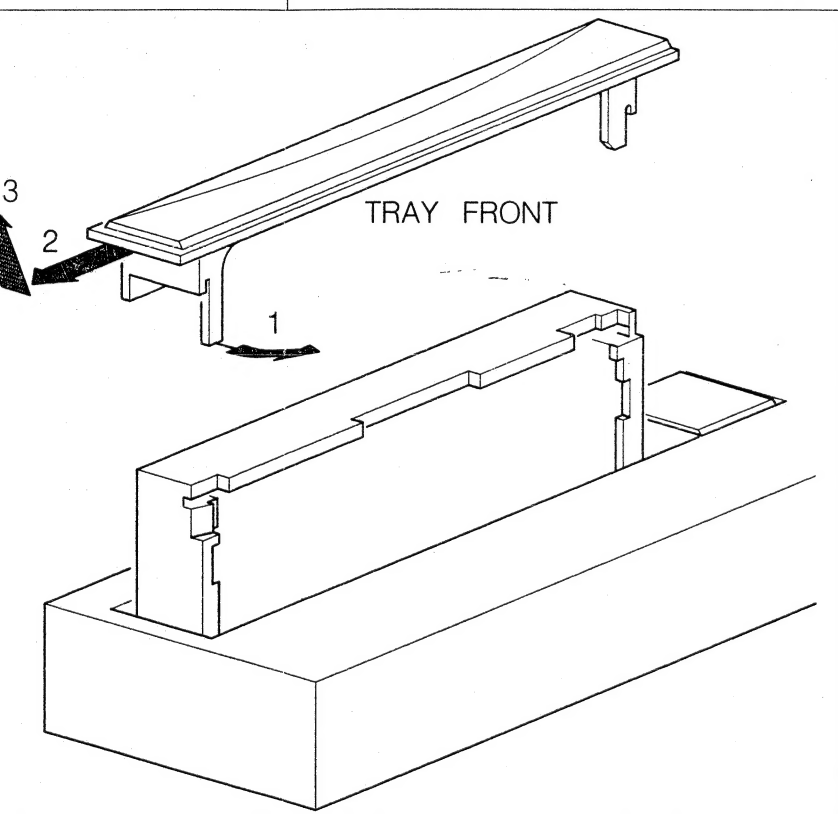
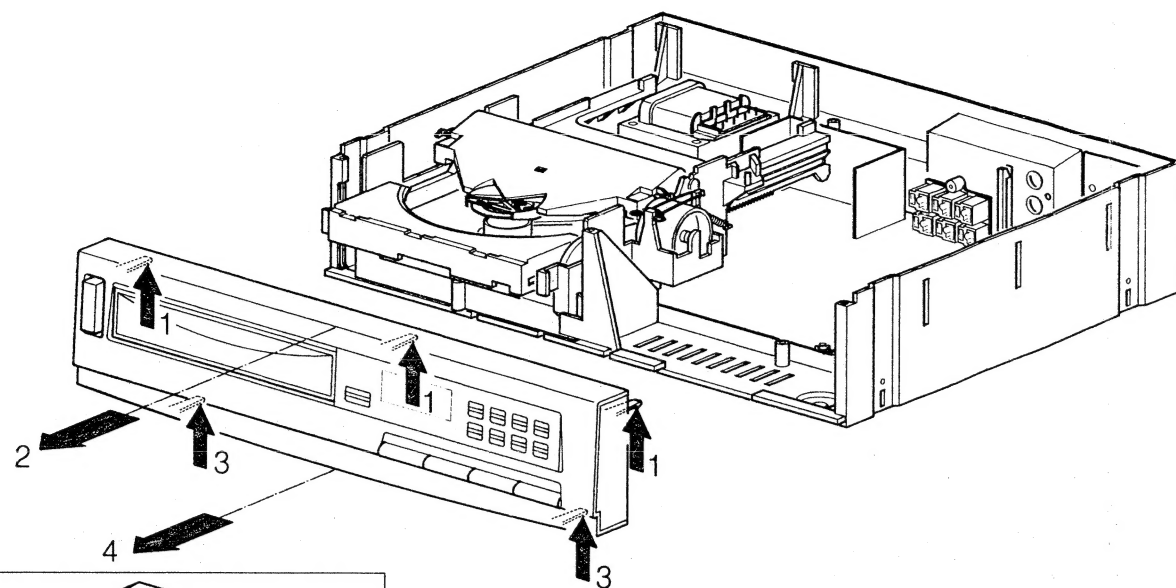
116

117

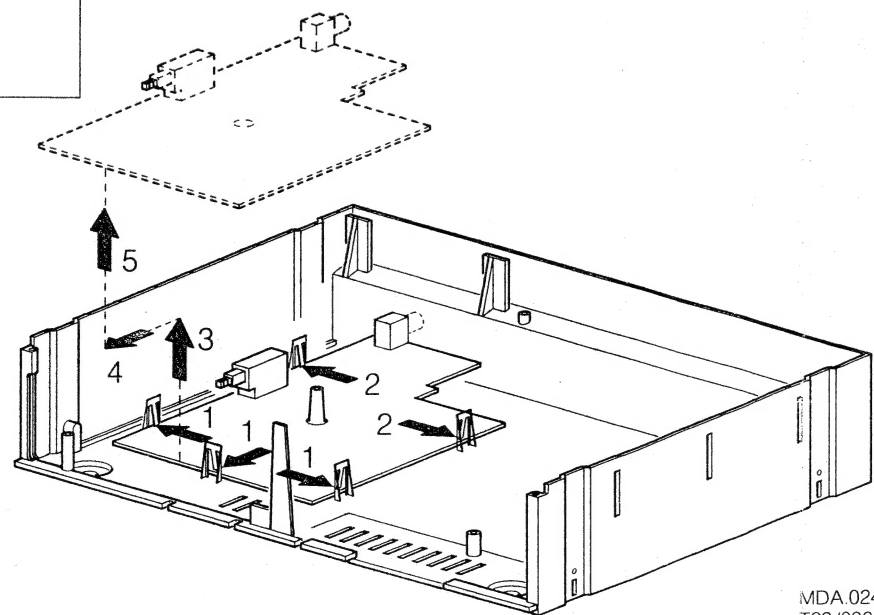
118



3

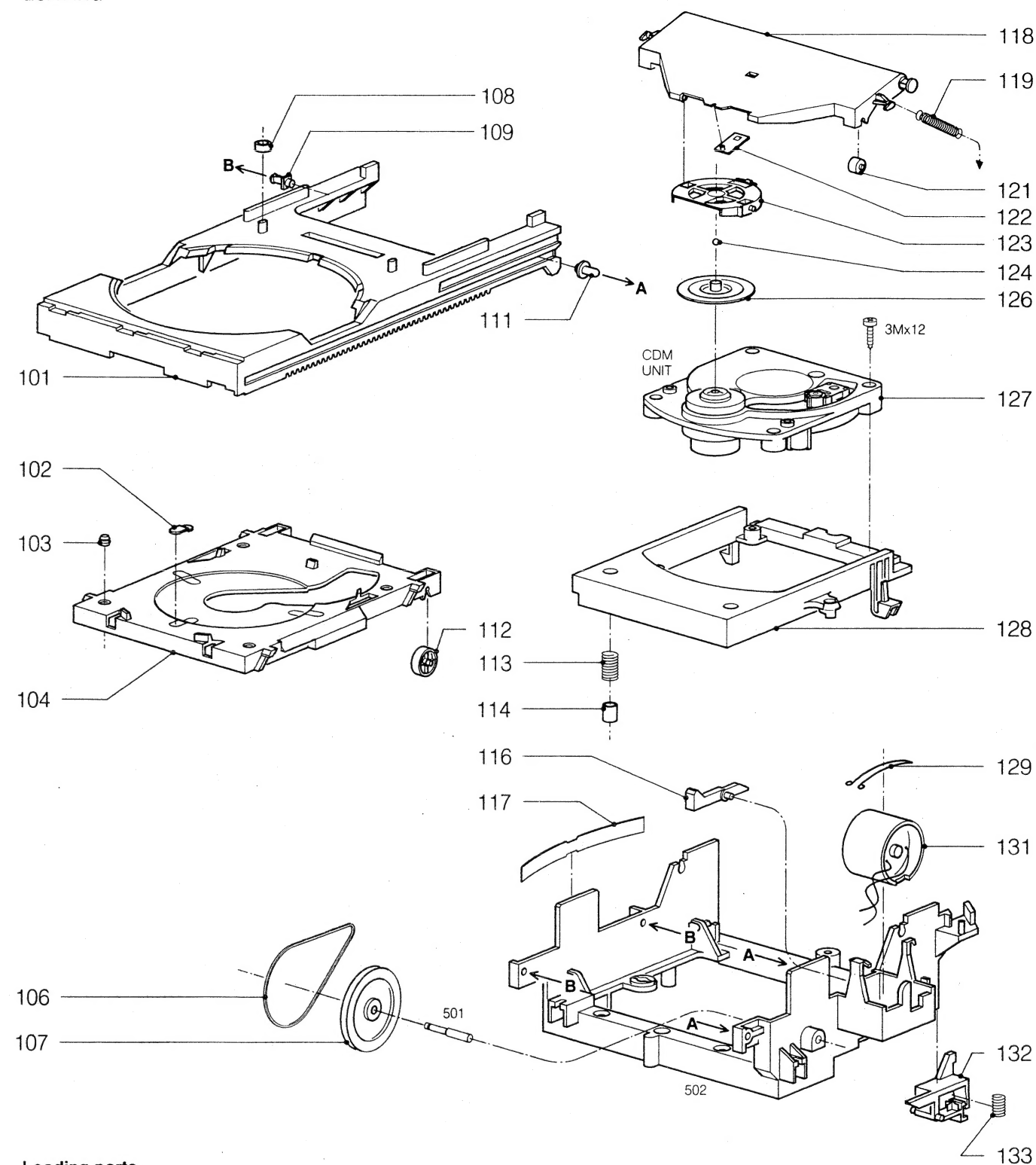


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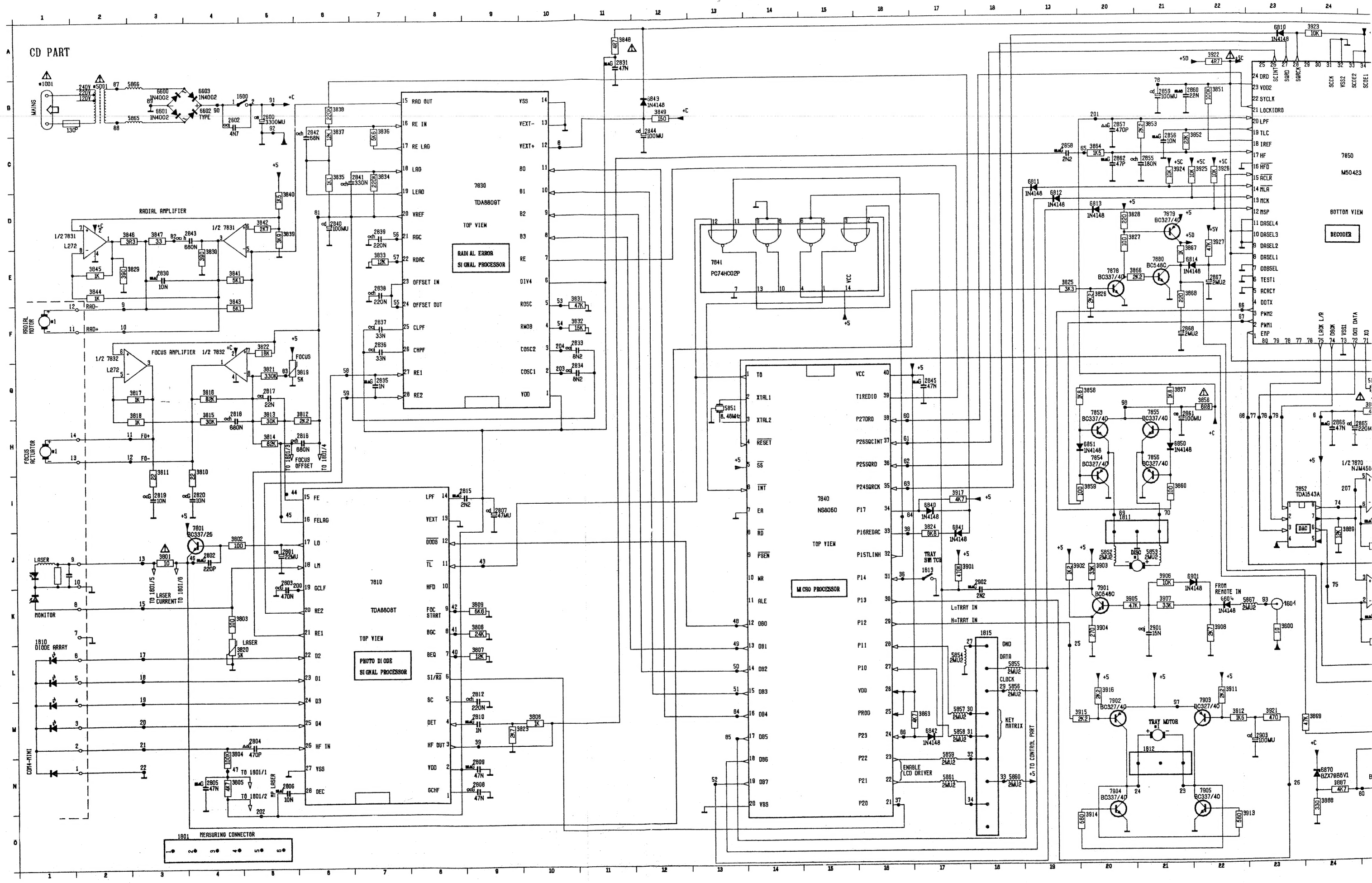
## LOADING

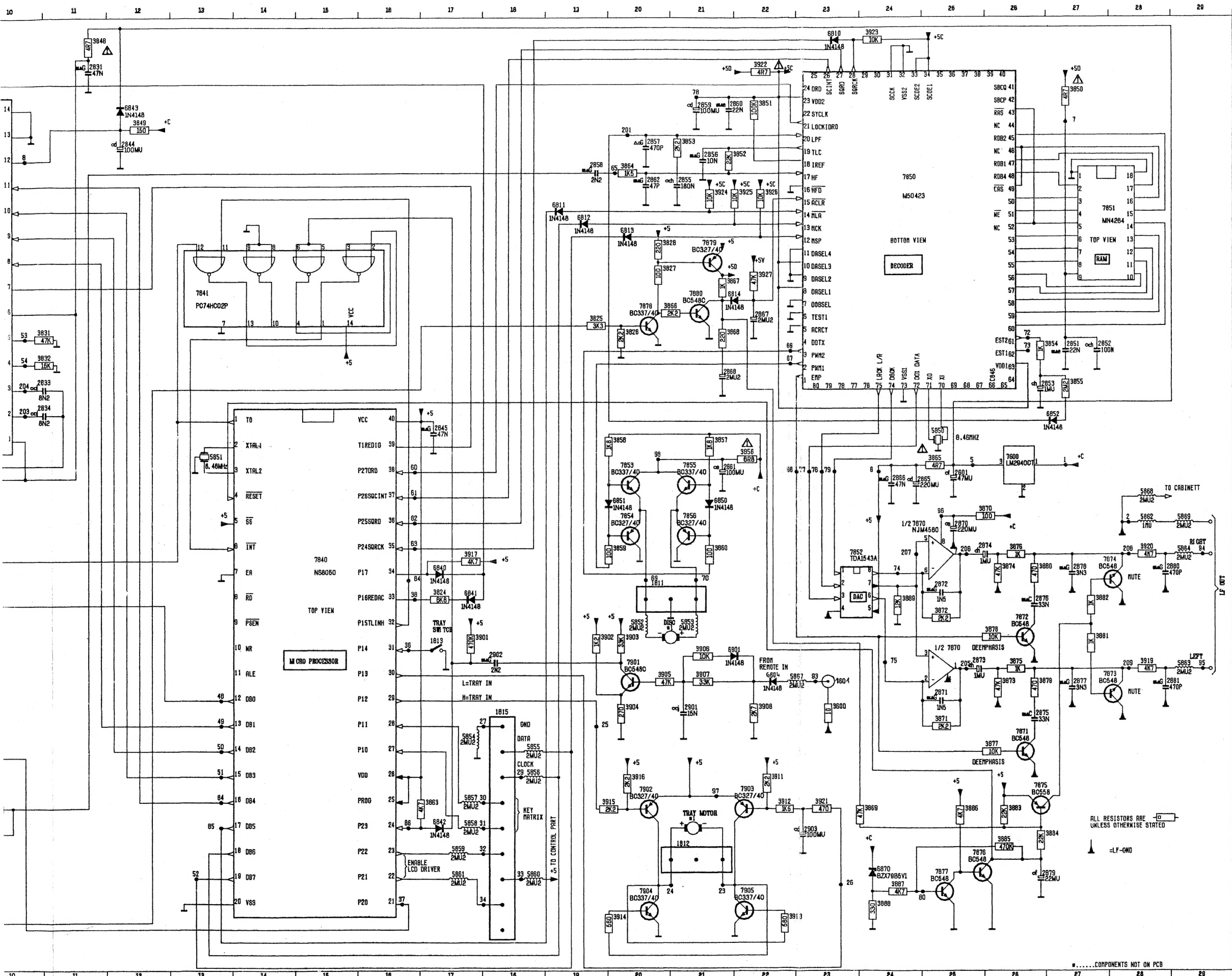


### Loading parts

|     |                |     |                |
|-----|----------------|-----|----------------|
| 101 | 4822 444 50626 | 119 | 4822 492 32883 |
| 102 | 4822 325 50176 | 121 | 4822 528 90639 |
| 103 | 4822 325 50177 | 122 | 4822 466 92257 |
| 104 | 4822 466 92251 | 123 | 4822 402 61207 |
| 106 | 4822 358 10115 | 124 | 4822 520 40177 |
| 107 | 4822 522 32359 | 126 | 4822 530 80503 |
| 108 | 4822 532 51756 | 127 | 4822 691 30209 |
| 109 | 4822 402 61081 | 128 | 4822 402 61196 |
| 111 | 4822 402 61132 | 129 | 4822 492 63746 |
| 112 | 4822 528 90638 | 131 | 4822 361 21327 |
| 113 | 4822 492 51902 | 132 | 4822 402 50281 |
| 114 | 4822 532 61168 | 133 | 4822 492 51935 |
| 116 | 4822 402 61107 |     |                |
| 117 | 4822 492 63659 |     |                |
| 118 | 4822 444 60568 |     |                |

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|      |     |      |      |      |     |
|------|-----|------|------|------|-----|
| 1    | F 1 | 3843 | E 4  | 7856 | H21 |
| 1    | J21 | 3844 | E 2  | 7870 | H24 |
| 1    | H 1 | 3845 | E 2  | 7871 | L26 |
| 1    | M21 | 3846 | D 3  | 7872 | J26 |
| 1001 | B 1 | 3847 | D 3  | 7873 | K28 |
| 5001 | B 2 | 3848 | D 11 | 7874 | I28 |
| 1600 | B 5 | 3849 | B 12 | 7875 | H26 |
| 1601 | K22 | 3850 | B27  | 7876 | H25 |
| 1601 | G 3 | 3851 | B22  | 7877 | H20 |
| 1810 | K 1 | 3852 | C21  | 7878 | E20 |
| 1811 | 120 | 3853 | B21  | 7879 | D21 |
| 1812 | M21 | 3854 | F26  | 7880 | E21 |
| 1813 | J17 | 3855 | F27  | 7901 | K20 |
| 1815 | K18 | 3856 | O22  | 7902 | M20 |
| 2600 | B 5 | 3857 | O21  | 7903 | H22 |
| 2601 | H25 | 3858 | O19  | 7904 | H20 |
| 2602 | B 4 | 3859 | I19  | 7905 | N22 |
| 2801 | J 5 | 3860 | I21  |      |     |
| 2802 | J 4 | 3863 | M16  |      |     |
| 2803 | J 5 | 3864 | C20  |      |     |
| 2804 | H 5 | 3865 | O25  |      |     |
| 2805 | N 4 | 3866 | E21  |      |     |
| 2806 | N 5 | 3867 | E21  |      |     |
| 2807 | I 9 | 3868 | E21  |      |     |
| 2808 | N 8 | 3869 | M23  |      |     |
| 2809 | N 8 | 3870 | H26  |      |     |
| 2810 | N 9 | 3871 | L26  |      |     |
| 2812 | L 9 | 3872 | J25  |      |     |
| 2815 | I 9 | 3873 | K28  |      |     |
| 2816 | H 6 | 3874 | I26  |      |     |
| 2817 | O 5 | 3875 | K26  |      |     |
| 2818 | O 4 | 3876 | I26  |      |     |
| 2819 | I 3 | 3877 | L26  |      |     |
| 2820 | I 4 | 3878 | J26  |      |     |
| 2830 | E 3 | 3879 | K28  |      |     |
| 2831 | R11 | 3880 | I26  |      |     |
| 2833 | F11 | 3881 | J27  |      |     |
| 2834 | G11 | 3882 | J27  |      |     |
| 2835 | O 7 | 3883 | M28  |      |     |
| 2836 | F 7 | 3884 | M28  |      |     |
| 2837 | F 7 | 3885 | M28  |      |     |
| 2838 | E 7 | 3886 | M25  |      |     |
| 2839 | O 7 | 3887 | N24  |      |     |
| 2840 | D 6 | 3888 | N24  |      |     |
| 2841 | C 6 | 3889 | J24  |      |     |
| 2842 | B 6 | 3901 | J17  |      |     |
| 2843 | O 4 | 3902 | J19  |      |     |
| 2844 | B12 | 3903 | J20  |      |     |
| 2845 | G17 | 3904 | K20  |      |     |
| 2851 | F27 | 3905 | K20  |      |     |
| 2852 | F27 | 3906 | J21  |      |     |
| 2853 | F26 | 3907 | K21  |      |     |
| 2855 | C21 | 3908 | K22  |      |     |
| 2856 | C21 | 3911 | L22  |      |     |
| 2857 | B20 | 3912 | M22  |      |     |
| 2858 | C19 | 3913 | O22  |      |     |
| 2859 | B21 | 3914 | O19  |      |     |
| 2860 | B21 | 3915 | M20  |      |     |
| 2861 | H21 | 3916 | L20  |      |     |
| 2862 | C20 | 3917 | I17  |      |     |
| 2865 | H24 | 3919 | K28  |      |     |
| 2866 | H24 | 3920 | I26  |      |     |
| 2867 | E22 | 3921 | M23  |      |     |
| 2868 | F21 | 3922 | R22  |      |     |
| 2870 | H25 | 3923 | R24  |      |     |
| 2871 | K25 | 3924 | C21  |      |     |
| 2872 | I25 | 3925 | C21  |      |     |
| 2873 | K25 | 3926 | C22  |      |     |
| 2874 | I26 | 3927 | E22  |      |     |
| 2875 | K26 | 3928 | O25  |      |     |
| 2876 | J26 | 3951 | O13  |      |     |
| 2877 | K27 | 3952 | J20  |      |     |
| 2878 | I27 | 3953 | J21  |      |     |
| 2879 | K28 | 3954 | L17  |      |     |
| 2880 | I28 | 3955 | L18  |      |     |
| 2881 | K28 | 3956 | L18  |      |     |
| 2901 | K21 | 3957 | M17  |      |     |
| 2902 | K18 | 3958 | M17  |      |     |
| 2903 | M23 | 3959 | N17  |      |     |
| 2900 | K23 | 3960 | N18  |      |     |
| 3801 | J 3 | 3961 | N17  |      |     |
| 3802 | J 4 | 3962 | H28  |      |     |
| 3803 | K 4 | 3963 | K29  |      |     |
| 3804 | H 4 | 3964 | I29  |      |     |
| 3905 | N 4 | 3965 | B 9  |      |     |
| 3906 | M10 | 3966 | B 3  |      |     |
| 3807 | L 9 | 3967 | K23  |      |     |
| 3808 | K 8 | 3968 | H28  |      |     |
| 3809 | K 9 | 3969 | H29  |      |     |
| 3810 | H 4 | 3970 | B 3  |      |     |
| 3811 | H 3 | 3971 | B 3  |      |     |
| 3812 | O 6 | 3972 | B 4  |      |     |
| 3813 | O 5 | 3973 | B 4  |      |     |
| 3814 | H 5 | 3974 | K23  |      |     |
| 3815 | O 4 | 3975 | C19  |      |     |
| 3816 | O 4 | 3976 | E22  |      |     |
| 3817 | O 3 | 3977 | O19  |      |     |
| 3818 | O 3 | 3978 | O20  |      |     |
| 3819 | O 5 | 3979 | R23  |      |     |
| 3820 | L 4 | 3980 | I17  |      |     |
| 3821 | O 5 | 3981 | J17  |      |     |
| 3822 | F 5 | 3982 | H17  |      |     |
| 3823 | H 5 | 3983 | B12  |      |     |
| 3824 | J17 | 3984 | H21  |      |     |
| 3825 | E19 | 3985 | H19  |      |     |
| 3826 | E20 | 3986 | O27  |      |     |
| 3827 | O20 | 3987 | N24  |      |     |
| 3828 | O20 | 3988 | J22  |      |     |
| 3829 | E 2 | 3989 | O26  |      |     |
| 3830 | E 4 | 3990 | I 4  |      |     |
| 3831 | E11 | 3991 | J 7  |      |     |
| 3832 | F11 | 3992 | C 9  |      |     |
| 3833 | E 7 | 3993 | O 1  |      |     |
| 3834 | C 7 | 3994 | F 2  |      |     |
| 3835 | C 6 | 3995 | I15  |      |     |
| 3836 | B 7 | 3996 | E13  |      |     |
| 3837 | B 8 | 3997 | C24  |      |     |
| 3838 | B 6 | 3998 | O27  |      |     |
| 3839 | O 5 | 3999 | I23  |      |     |
| 3840 | O 5 | 4000 | H20  |      |     |
| 3841 | E 4 | 4001 | H20  |      |     |
| 3842 | O 5 | 4002 | H21  |      |     |

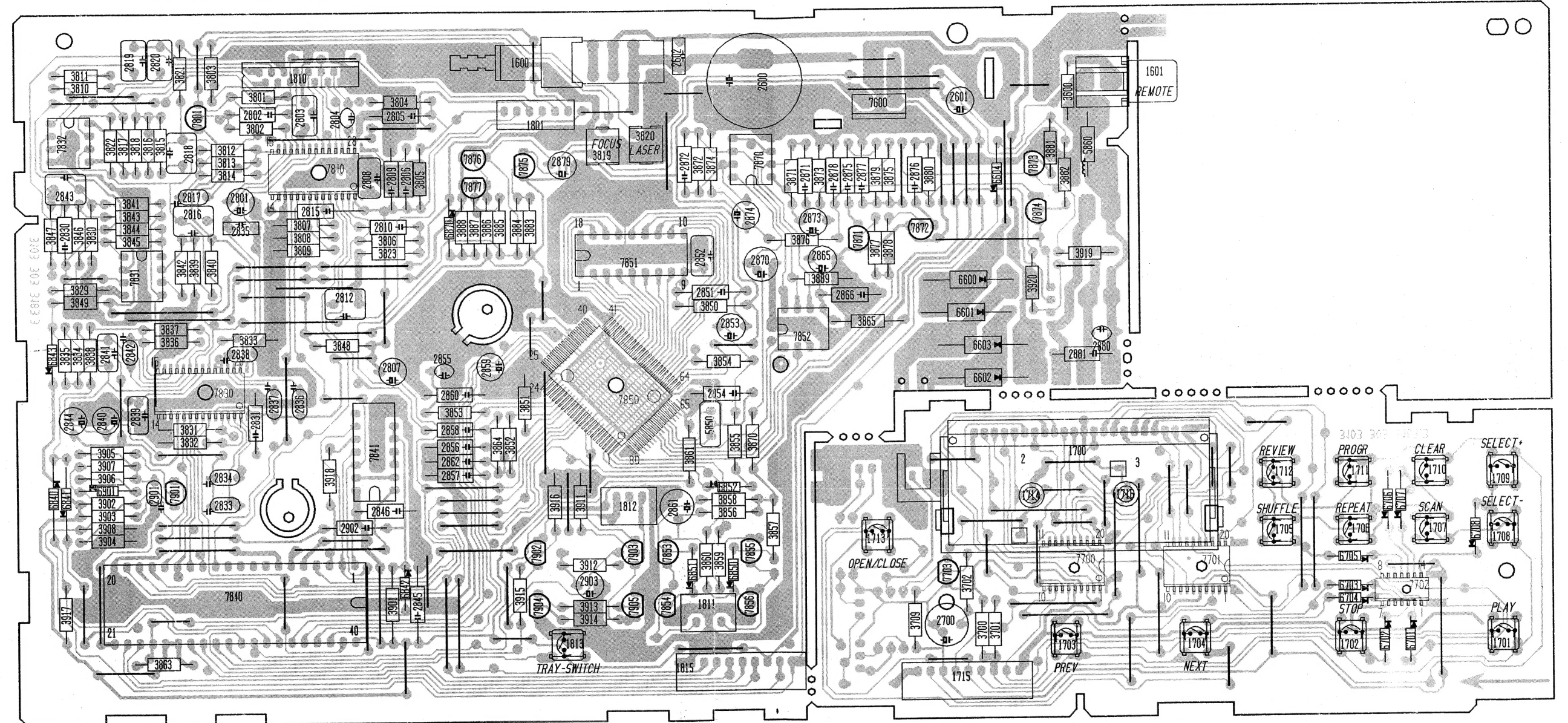
ALL RESISTORS ARE  
UNLESS OTHERWISE STATED  
=LF-OWD

.....COMPONENTS NOT ON PCB



|      |      |      |      |      |      |      |     |      |     |      |     |      |     |      |      |      |      |      |     |      |     |      |     |      |     |      |     |      |      |      |      |      |     |      |      |      |      |      |      |      |      |      |      |      |     |
|------|------|------|------|------|------|------|-----|------|-----|------|-----|------|-----|------|------|------|------|------|-----|------|-----|------|-----|------|-----|------|-----|------|------|------|------|------|-----|------|------|------|------|------|------|------|------|------|------|------|-----|
| 1600 | A 6  | 1709 | F 16 | 1812 | F 7  | 2804 | B 4 | 2819 | B 3 | 2839 | E 2 | 2854 | E 8 | 2870 | C 8  | 2881 | D 11 | 3802 | B 3 | 3813 | B 3 | 3829 | D 2 | 3840 | C 3 | 3851 | E 6 | 3863 | G 2  | 3878 | C 10 | 3889 | D 9 | 3913 | G 7  | 6601 | D 10 | 6708 | F 15 | 7703 | G 10 | 7856 | G 8  | 7903 | F 7 |
| 1601 | B 12 | 1710 | F 15 | 1813 | G 7  | 2805 | B 5 | 2819 | A 2 | 2840 | E 2 | 2855 | D 5 | 2871 | C 9  | 2901 | F 2  | 3803 | B 3 | 3814 | C 3 | 3830 | C 2 | 3841 | C 2 | 3852 | E 6 | 3864 | E 6  | 3879 | C 9  | 3901 | G 5 | 3914 | G 7  | 6602 | E 10 | 6840 | F 1  | 7801 | B 3  | 7870 | B 8  | 7904 | G 6 |
| 1700 | E 11 | 1711 | F 14 | 1815 | H 8  | 2806 | C 5 | 2820 | A 2 | 2841 | D 2 | 2856 | E 5 | 2872 | B 8  | 2902 | F 4  | 3804 | B 5 | 3815 | B 2 | 3831 | E 3 | 3842 | C 3 | 3853 | E 5 | 3865 | D 9  | 3880 | C 10 | 3902 | F 2 | 3915 | G 6  | 6603 | D 10 | 6841 | F 1  | 7831 | D 2  | 7871 | C 9  | 7905 | G 7 |
| 1701 | C 16 | 1712 | F 14 | 2    | E 11 | 2807 | D 5 | 2830 | C 1 | 2842 | D 2 | 2857 | F 5 | 2873 | C 9  | 2903 | G 7  | 3805 | C 5 | 3816 | B 2 | 3832 | E 3 | 3843 | C 2 | 3854 | D 8 | 3870 | E 8  | 3881 | B 11 | 3903 | F 2 | 3916 | F 6  | 6604 | C 11 | 6842 | G 5  | 7832 | B 1  | 7872 | C 10 |      |     |
| 1702 | G 14 | 1713 | F 9  | 2600 | B 8  | 2808 | C 4 | 2831 | E 3 | 2843 | C 1 | 2858 | F 5 | 2874 | C 8  | 3    | F 12 | 3806 | C 5 | 3817 | B 2 | 3833 | D 3 | 3844 | C 2 | 3855 | E 8 | 3871 | C 9  | 3882 | C 11 | 3904 | F 2 | 3917 | G 1  | 6701 | G 15 | 6843 | D 1  | 7840 | G 3  | 7873 | C 11 |      |     |
| 1703 | G 11 | 1714 | F 11 | 2601 | B 10 | 2809 | C 5 | 2833 | F 3 | 2844 | E 1 | 2859 | D 6 | 2875 | C 9  | 3600 | B 11 | 3807 | C 4 | 3818 | B 2 | 3834 | D 2 | 3845 | C 2 | 3856 | F 8 | 3872 | C 8  | 3883 | C 6  | 3905 | E 2 | 3918 | F 4  | 6702 | G 14 | 6850 | G 8  | 7841 | E 4  | 7874 | C 11 |      |     |
| 1704 | G 13 | 1715 | H 10 | 2602 | A 7  | 2810 | C 5 | 2834 | F 3 | 2845 | C 5 | 2860 | E 5 | 2876 | C 10 | 3700 | G 10 | 3808 | C 4 | 3819 | B 7 | 3835 | D 1 | 3846 | C 2 | 3857 | F 8 | 3873 | C 9  | 3884 | C 6  | 3906 | F 2 | 3919 | C 12 | 6703 | G 14 | 6851 | G 8  | 7851 | C 7  | 7875 | B 6  |      |     |
| 1705 | F 14 | 1716 | F 12 | 2700 | G 10 | 2812 | D 4 | 2835 | C 3 | 2846 | F 5 | 2861 | F 7 | 2877 | C 9  | 3701 | C 11 | 3809 | C 4 | 3820 | B 7 | 3836 | D 2 | 3847 | C 1 | 3858 | F 8 | 3874 | C 8  | 3885 | C 6  | 3907 | E 2 | 3920 | D 11 | 6704 | G 14 | 6852 | F 8  | 7852 | D 9  | 7876 | B 5  |      |     |
| 1706 | F 14 | 1801 | B 6  | 2801 | C 3  | 2815 | C 4 | 2836 | E 4 | 2851 | D 8 | 2862 | E 5 | 2878 | C 9  | 3702 | G 10 | 3810 | B 2 | 3821 | B 3 | 3837 | D 2 | 3848 | D 4 | 3859 | F 8 | 3875 | C 10 | 3886 | C 6  | 3908 | F 2 | 5850 | E 8  | 6705 | F 14 | 6870 | C 5  | 7853 | F 7  | 7877 | C 5  |      |     |
| 1707 | F 15 | 1810 | B 4  | 2802 | B 3  | 2816 | C 3 | 2837 | E 3 | 2852 | C 8 | 2865 | C 9 | 2879 | B 6  | 3709 | G 10 | 3811 | B 2 | 3822 | B 2 | 3838 | D 2 | 3849 | D 2 | 3860 | F 8 | 3876 | C 9  | 3887 | C 5  | 3911 | F 7 | 5860 | B 12 | 6706 | F 14 | 6901 | F 2  | 7854 | G 7  | 7901 | F 2  |      |     |
| 1708 | F 16 | 1811 | G 8  | 2803 | B 4  | 2817 | C 3 | 2838 | D 3 | 2853 | D 8 | 2866 | D 9 | 2880 | D 12 | 3801 | B 3  | 3812 | B 3 | 3823 | C 5 | 3839 | C 3 | 3850 | D 8 | 3861 | E 8 | 3877 | C 9  | 3888 | C 5  | 3912 | F 7 | 6600 | D 10 | 6707 | F 15 | 7500 | B 9  | 7855 | F 8  | 7902 | F 6  |      |     |

COMP. DISK BOARD / COMPONENT SIDE VIEW / AK601



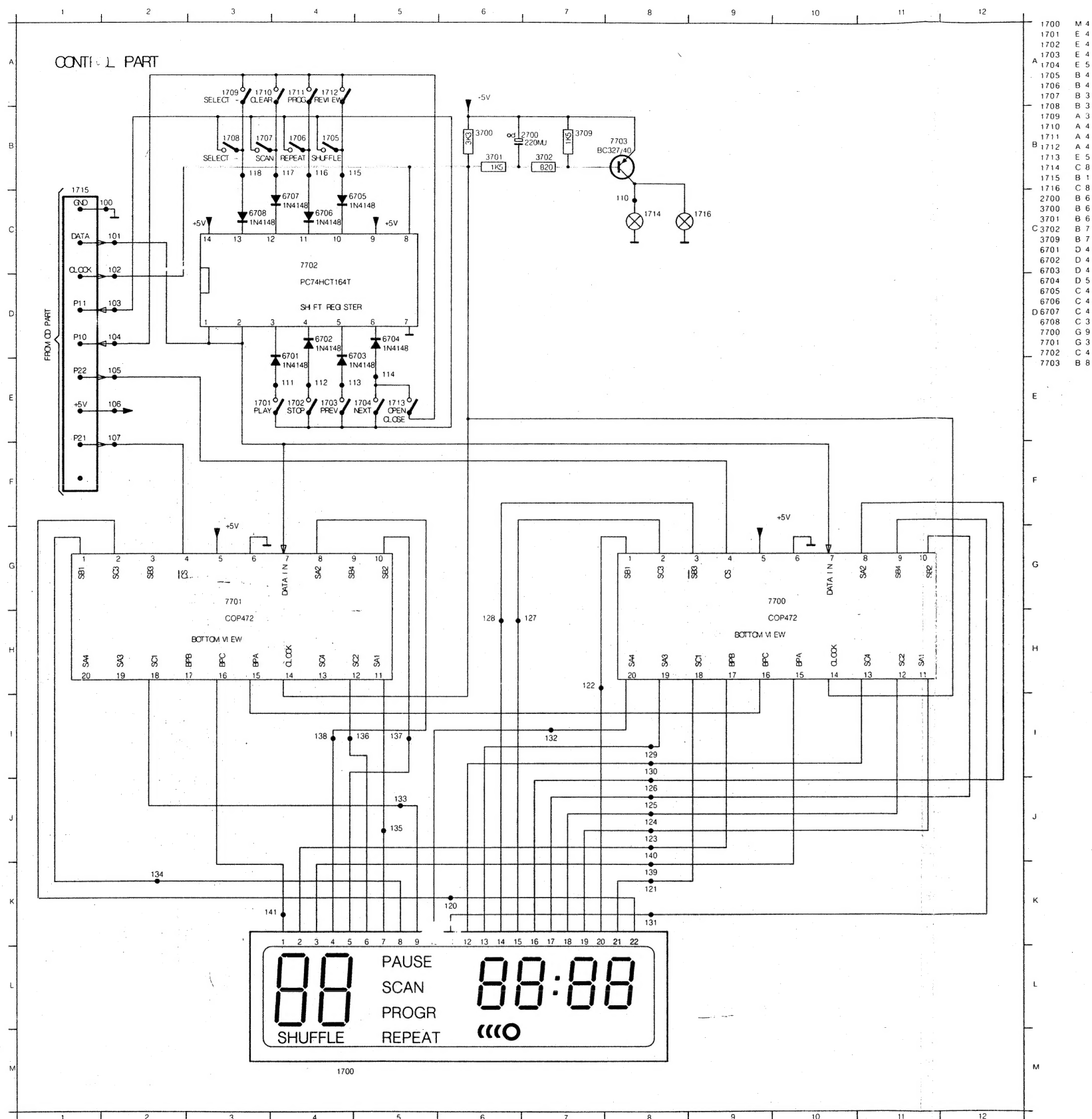
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### Alignment instructions

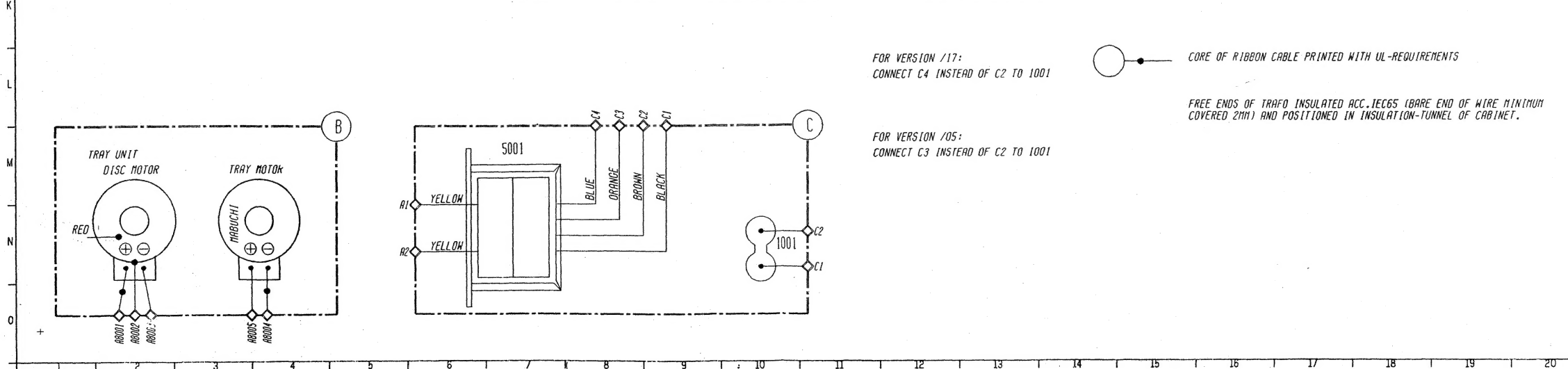
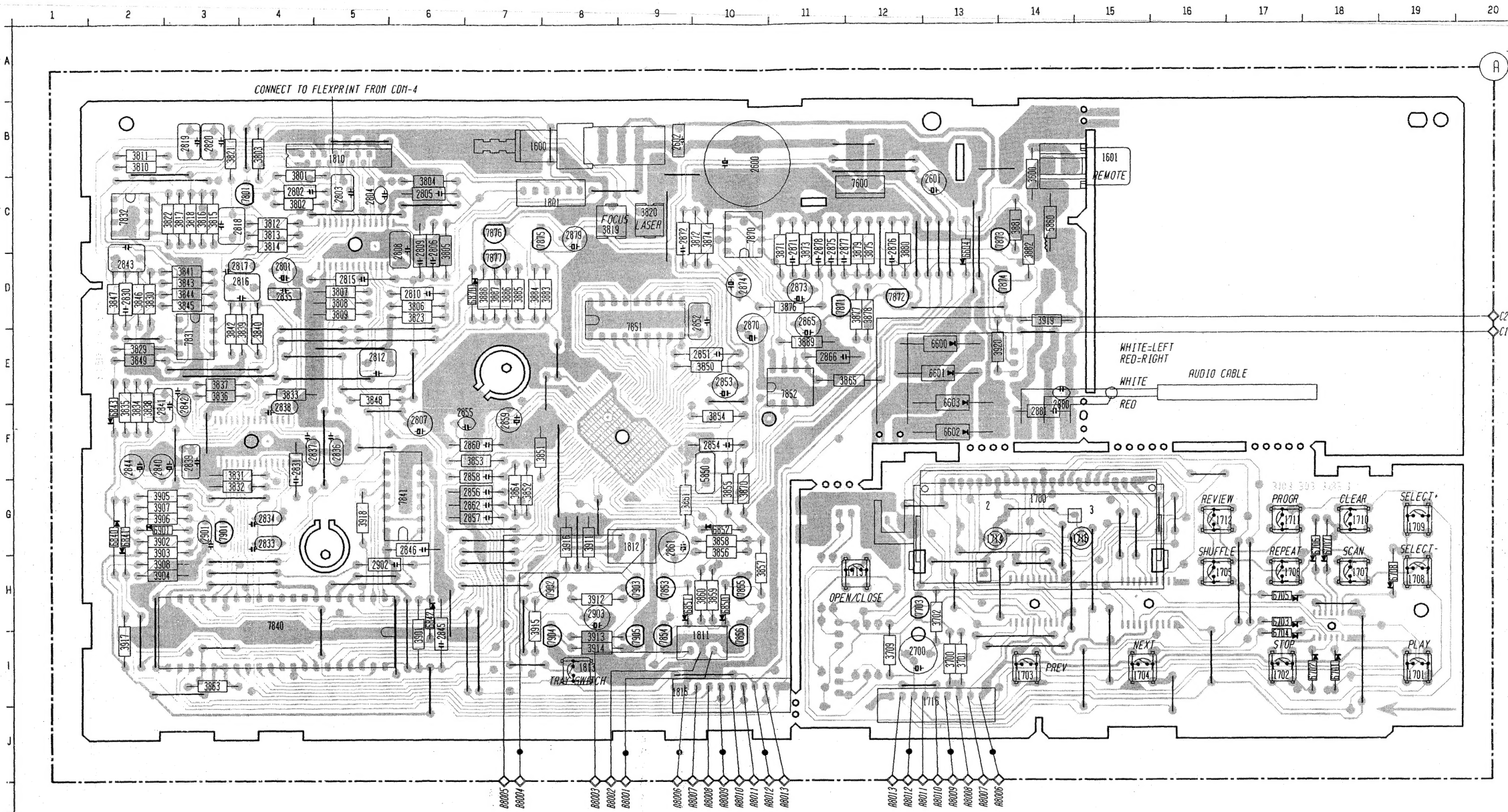
|                  | Measuring point             | Adjust with   | Value            |
|------------------|-----------------------------|---------------|------------------|
| Laser            | Connector 1801<br>Pin 1 & 2 | Trimmpot 3820 | 50mV $\pm$ 2,5mV |
| Focus-<br>offset | Connector 1801<br>Pin 3 & 4 | Trimmpot 3819 | 400mV $\pm$ 40mV |

Use an Millivoltmeter with an high input impedance ( $\geq 10M\Omega$ )



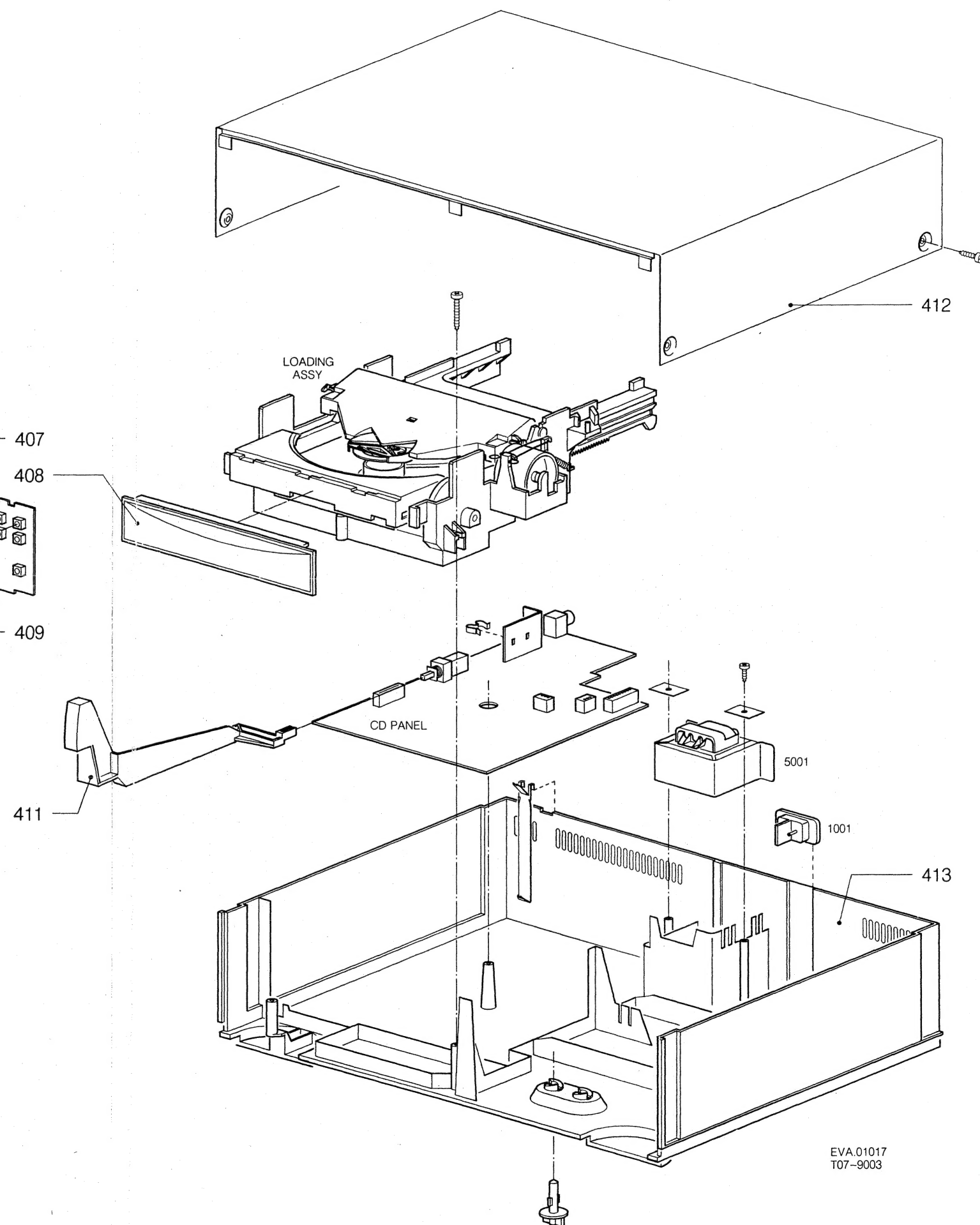
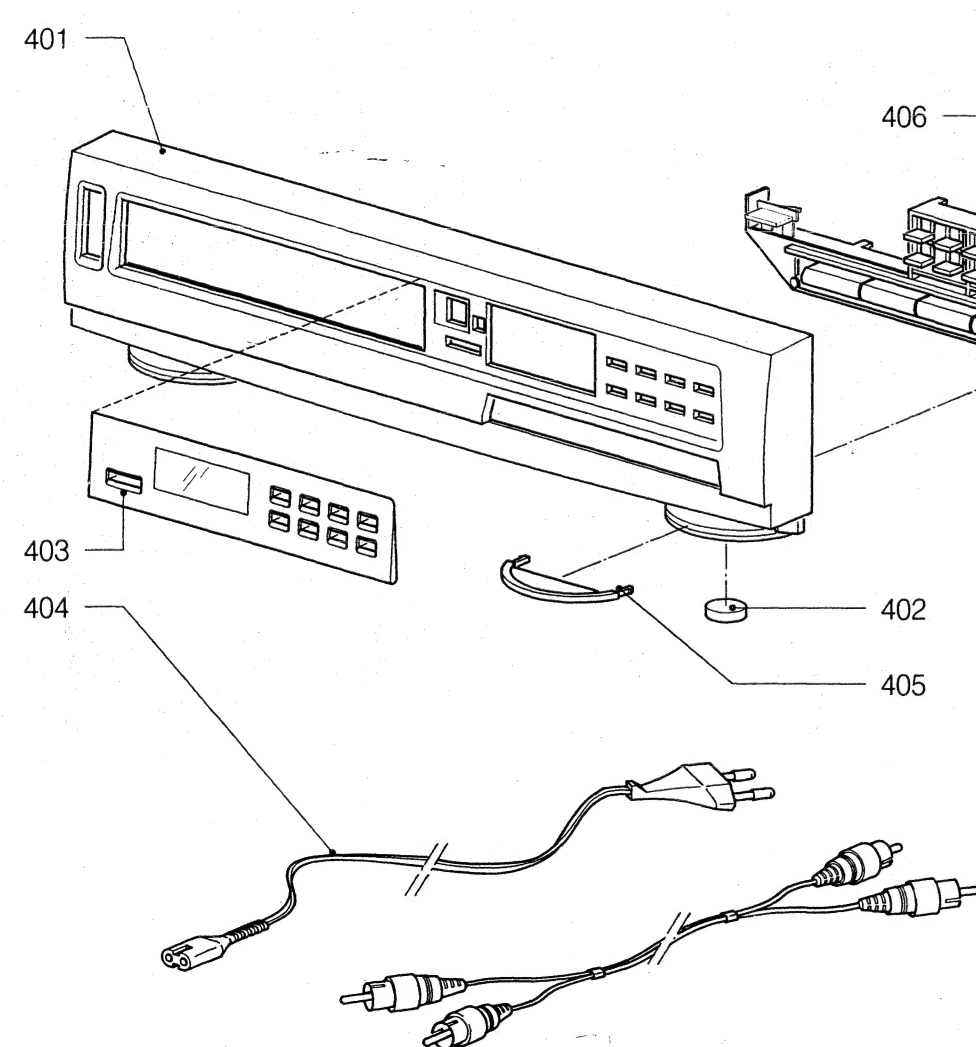


|      |     |      |     |      |     |      |     |      |     |      |     |      |     |      |     |      |     |      |     |      |     |      |     |      |     |      |     |      |     |      |     |      |     |      |     |      |     |
|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|
| 1600 | B 7 | 1711 | G17 | 2600 | B10 | 2810 | D 6 | 2836 | F 5 | 2853 | E10 | 2871 | C11 | 2903 | H 8 | 3807 | D 5 | 3820 | C 9 | 3838 | F 2 | 3851 | F 7 | 3865 | E12 | 3882 | D14 | 3906 | G 2 | 5850 | F10 | 6707 | G18 | 7801 | C 4 | 7872 | D12 |
| 1601 | B15 | 1712 | G16 | 2601 | C13 | 2812 | E 5 | 2837 | F 4 | 2854 | F10 | 2872 | C 9 | 3    | G15 | 3808 | D 5 | 3821 | B 3 | 3839 | E 4 | 3852 | G 7 | 3870 | G10 | 3883 | O 8 | 3907 | G 2 | 5850 | C14 | 6708 | H19 | 7831 | E 3 | 7873 | C14 |
| 1700 | G14 | 1713 | H12 | 2602 | B 9 | 2815 | D 5 | 2838 | F 4 | 2855 | F 7 | 2873 | D11 | 3600 | C14 | 3809 | D 5 | 3822 | C 3 | 3840 | E 4 | 3853 | F 7 | 3871 | C11 | 3884 | O 7 | 3908 | H 2 | 6600 | E13 | 6840 | G 2 | 7832 | C 2 | 7874 | C14 |
| 1701 | I19 | 1714 | G13 | 2700 | I12 | 2816 | D 4 | 2839 | F 3 | 2856 | G 7 | 2874 | D10 | 3700 | I13 | 3810 | B 2 | 3823 | D 6 | 3841 | O 3 | 3854 | F10 | 3872 | C10 | 3885 | O 7 | 3911 | G 8 | 6601 | E13 | 6841 | G 2 | 7840 | H 4 | 7875 | C 7 |
| 1702 | I17 | 1715 | J13 | 2801 | D 4 | 2817 | D 4 | 2840 | F 2 | 2857 | G 7 | 2875 | C11 | 3701 | I13 | 3811 | B 2 | 3829 | E 2 | 3842 | E 3 | 3855 | G10 | 3873 | C11 | 3886 | O 7 | 3912 | H 8 | 6602 | F13 | 6842 | H 6 | 7841 | G 6 | 7876 | C 7 |
| 1703 | I14 | 1716 | G15 | 2802 | C 4 | 2818 | C 3 | 2841 | F 2 | 2858 | F 7 | 2876 | C12 | 3702 | H13 | 3812 | C 4 | 3830 | D 2 | 3843 | D 3 | 3856 | G10 | 3874 | C10 | 3887 | O 7 | 3913 | I 8 | 6603 | F13 | 6843 | F 2 | 7851 | D 9 | 7877 | D 7 |
| 1704 | I15 | 1801 | C 8 | 2803 | C 5 | 2819 | B 3 | 2842 | F 3 | 2859 | F 7 | 2877 | C11 | 3709 | I12 | 3813 | C 4 | 3831 | F 3 | 3844 | D 3 | 3857 | H10 | 3875 | C12 | 3888 | O 7 | 3914 | I 8 | 6604 | C13 | 6850 | H10 | 7852 | E11 | 7901 | G 3 |
| 1705 | H16 | 1810 | B 5 | 2804 | C 5 | 2820 | B 3 | 2843 | D 2 | 2860 | F 7 | 2878 | C11 | 3801 | B 4 | 3814 | C 4 | 3832 | G 3 | 3845 | D 3 | 3858 | G10 | 3876 | D11 | 3889 | E11 | 3915 | H 7 | 6701 | I18 | 6851 | H 9 | 7853 | H 9 | 7902 | H 8 |
| 1706 | H17 | 1811 | I10 | 2805 | C 6 | 2830 | D 2 | 2844 | F 2 | 2861 | G 9 | 2879 | C 8 | 3802 | C 4 | 3815 | C 3 | 3833 | E 4 | 3846 | D 2 | 3859 | H10 | 3877 | D12 | 3901 | I 6 | 3916 | G 8 | 6702 | I18 | 6852 | G10 | 7854 | I 9 | 7903 | H 9 |
| 1707 | H18 | 1812 | G 9 | 2806 | C 6 | 2831 | F 4 | 2845 | I 6 | 2862 | G 7 | 2880 | F14 | 3803 | B 4 | 3816 | C 3 | 3834 | F 2 | 3847 | D 2 | 3860 | H10 | 3878 | D12 | 3902 | G 2 | 3917 | I 2 | 6703 | H17 | 6870 | D 7 | 7855 | H10 | 7904 | I 8 |
| 1708 | H19 | 1813 | I 8 | 2807 | F 6 | 2833 | G 4 | 2846 | G 6 | 2865 | D11 | 2881 | F14 | 3804 | C 5 | 3817 | C 3 | 3835 | F 2 | 3848 | E 5 | 3861 | G 9 | 3879 | C12 | 3903 | G 2 | 3918 | G 5 | 6704 | I17 | 6901 | G 2 | 7856 | I10 | 7905 | I 9 |
| 1709 | G19 | 1815 | I 9 | 2808 | C 6 | 2834 | G 4 | 2851 | E10 | 2866 | E11 | 2901 | G 3 | 3805 | C 6 | 3818 | C 3 | 3836 | E 3 | 3849 | E 2 | 3863 | I 3 | 3880 | C12 | 3904 | H 2 | 3919 | D14 | 6705 | H17 | 7600 | C12 | 7870 | C10 |      |     |
| 1710 | G18 | 2    | G13 | 2809 | C 6 | 2835 | D 4 | 2852 | D10 | 2870 | D10 | 2902 | H 5 | 3806 | D 6 | 3819 | C 8 | 3837 | E 3 | 3850 | E10 | 3864 | G 7 | 3881 | C14 | 3905 | G 2 | 3920 | E13 | 6706 | G18 | 7703 | H12 | 7871 | D11 |      |     |








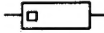

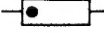
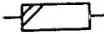
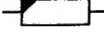


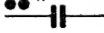


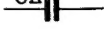

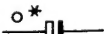
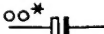
# MECHANICAL PARTSLIST

|     |                |                            |
|-----|----------------|----------------------------|
| 401 | 4822 444 40354 | Front                      |
| 402 | 4822 462 40683 | Rubber foot                |
| 403 | 4822 450 61521 | Window                     |
| 404 | 4822 321 10529 | Mains cord for /00 /01 /40 |
|     | 4822 321 10561 | Mains cord for /05 /45     |
|     | 4822 321 10259 | Mains cord for /17         |
| 405 | 4822 462 41337 | Cap                        |
| 406 | 4822 466 70673 | Diffuser                   |
| 407 | 4822 255 41091 | LCD Holder                 |
| 408 | 4822 454 30437 | Tray front                 |
| 409 | 4822 410 60568 | Key support                |
| 411 | 4822 410 60569 | Power button               |
| 412 | 4822 444 60677 | Cover                      |
| 413 | 4822 444 50625 | Bottom                     |



## ELECTRICAL PARTSLIST

| Miscellaneous   |                |                             |  |                |                |
|---|----------------|-----------------------------|---|----------------|----------------|
| 1001  | 4822 267 30911 | Mains socket (not for /17)  | 7703  | 4822 130 41327 | BC327/40       |
| 1001  | 4822 267 31045 | Mains socket (only for /17) | 7801  | 4822 130 40981 | BC337/25       |
| 1002  | 4822 361 21327 | Tray motor                  | 7853  | 4822 130 41344 | BC337/40       |
| 1600  | 4822 276 12753 | Power switch                | 7854  | 4822 130 41327 | BC327/40       |
| 1601  | 4822 276 31016 | Socket remote in            | 7855  | 4822 130 41344 | BC337/40       |
| 1700  | 4822 130 90826 | Display                     | 7856  | 4822 130 41327 | BC327/40       |
| 1701  | 4822 276 12465 | Tact switch "PLAY"          | 7871  | 4822 130 40938 | BC548          |
| 1702  | 4822 276 12465 | Tact switch "STOP"          | 7872  | 4822 130 40938 | BC548          |
| 1703  | 4822 276 12465 | Tact switch "PREVIOUS"      | 7873  | 4822 130 40938 | BC548          |
| 1704  | 4822 276 12465 | Tact switch "NEXT"          | 7874  | 4822 130 40938 | BC548          |
| 1705  | 4822 276 12465 | Tact switch "SHUFFLE"       | 7875  | 4822 130 40938 | BC548          |
| 1706  | 4822 276 12465 | Tact switch "REPEAT"        | 7876  | 4822 130 40938 | BC548          |
| 1707  | 4822 276 12465 | Tact switch "SCAN"          | 7877  | 4822 130 40938 | BC548          |
| 1708  | 4822 276 12465 | Tact switch "SELECT-"       | 7901  | 4822 130 44196 | BC548C         |
| 1709  | 4822 276 12465 | Tact switch "SELECT+"       | 7902  | 4822 130 41327 | BC327/40       |
| 1710  | 4822 276 12465 | Tact switch "CLEAR"         | 7903  | 4822 130 41327 | BC327/40       |
| 1711  | 4822 276 12465 | Tact switch "PROGRAM"       | 7904  | 4822 130 41344 | BC337/40       |
| 1712  | 4822 276 12465 | Tact switch "REVIEW"        | 7950  | 4822 130 41344 | BC337/40       |
| 1713  | 4822 276 12465 | Tact switch "OPEN/CLOSE"    |  |                |                |
| 1714  | 4822 134 40885 | Lamp 5V                     |   |                |                |
| 1716  | 4822 134 40885 | Lamp 5V                     | 7600  | 5322 209 72487 | LM2940CT-5.0   |
| 5001  | 4822 146 21079 | Mains transformer           | 7700  | 4822 209 62111 | COP472-3       |
|    |                |                             | 7701  | 4822 209 62111 | COP472-3       |
|   |                |                             | 7702  | 4822 209 62113 | PC74HCT164T    |
|   |                |                             | 7810  | 4822 209 73234 | TDA8808T/C3    |
| 4822 130 30684  | 1N4002         |                             | 7830  | 4822 209 73235 | TDA8808T/C2    |
| 4822 130 30621  | 1N4148         |                             | 7831  | 4822 209 70705 | L272MH         |
| 4822 130 34233  | Z-Diode 5V1    |                             | 7832  | 4822 209 70705 | L272MH         |
|  |                |                             | 7840  | 4822 209 62493 | µP INS50QLG/N  |
|   |                |                             | 7841  | 5322 209 11331 | PC74HC02P      |
|   |                |                             | 7850  | 4822 209 62112 | M50423FP       |
|   |                |                             | 7851  | 4822 209 70422 | MN4264-15      |
|   |                |                             | 7852  | 4822 209 62114 | TDA1543A/M2/S2 |
|   |                |                             | 7870  | 4822 209 83274 | NJM4560D       |
|   |                |                             |   |                |                |
|   |                |                             |   |                |                |
| 3801  | 4822 111 30508 | Safety resistor 10Ω         |   |                |                |
| 3819  | 4822 100 11088 | Trimpot                     |   |                |                |
| 3820  | 4822 100 11088 | Trimpot                     |   |                |                |
| 3850  | 4822 111 30499 | Safety resistor 4,7Ω        |   |                |                |
| 3848  | 4822 111 30499 | Safety resistor 4,7Ω        |   |                |                |
| 3865  | 4822 111 30499 | Safety resistor 4,7Ω        |   |                |                |

|   |  |  |          |    |
|---|--|--|----------|----|
|  |  | Carbon film                            |          |    |
|   |  | 0.2 W                                  | 70°C     | 5% |
|  |  | Carbon film                            |          |    |
|   |  | 0.33 W                                 | 70°C     | 5% |
|  |  | Metal film                             |          |    |
|   |  | 0.33 W                                 | 70°C     | 5% |
|  |  | Carbon film                            |          |    |
|   |  | 0.5 W                                  | 70°C     | 5% |
|  |  | Carbon film                            |          |    |
|   |  | 0.67 W                                 | 70°C     | 5% |
|  |  | Carbon film                            |          |    |
|   |  | 1.15 W                                 | 70°C     | 5% |
|  |  | Chip component                         |          |    |
|  |  | Ceramic plate                          |          |    |
|   |  | Tuning ≤ 120 pF NP.0                   | 2%       |    |
|   |  | Others                                 | -20/+80% |    |
|  |  | Polyester flat foil                    | 10%      |    |
|  |  | Metalized polyester flat film          | 10%      |    |
|  |  | Polyester flat foil small size (Mylar) | 10%      |    |
|  |  | Polystyrene film/foil                  | 1%       |    |
|  |  | Tubular ceramic                        |          |    |
|  |  | Miniature single                       |          |    |
|  |  | Subminiature tantalum                  | ± 20%    |    |

\*a = 2,5 V  
 b = 4 V  
 c = 6,3 V  
 d = 10 V  
 e = 16 V  
 f = 25 V  
 g = 40 V  
 h = 63 V  
 j = 100 V  
 l = 125 V  
 m = 150 V  
 n = 160 V  
 q = 200 V  
 r = 250 V  
 s = 300 V  
 t = 350 V  
 u = 400 V  
 v = 500 V  
 w = 630 V  
 x = 1000 V  
 A = 1,6 V  
 B = 6 V  
 C = 12 V  
 D = 15 V  
 E = 20 V  
 F = 35 V  
 G = 50 V  
 H = 75 V  
 I = 80 V